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On the solvability of nonlocal nonstationary problems with double degeneration

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Abstract

We study the solvability in Sobolev spaces of the first boundary value problem for a nonlinear evolution equation degenerating both on the solution and on the solution gradient. We consider the case in which the spatial operator can depend on a nonlocal characteristic of a solution, for example, on an integral characteristic. The theorem is proved with the use of the time discretization method. To study the solvability of the spatial problems arising in the course of the proof, we use the Galerkin method. © 2011 Pleiades Publishing, Ltd.

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